

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (Currently amended): A total shoulder arthroplasty apparatus for recreating an anatomic proximal humeral configuration, comprising:

a stemless, ~~partial~~ humeral head fixation configured for coupling fixation to a flat cut proximal humeral surface, wherein the ~~partial~~ humeral head fixation includes a ~~partial~~ humeral head including a base surface configured for cement or ingrowth fixation, or both, and a rotationally-stabilizing base extension protruding therefrom including multiple fins configured for impaction into a cancellous region of the cut humeral surface, wherein the base surface of the ~~partial~~ humeral head is configured to contact ~~contacts~~ or substantially mate ~~mates~~ with the cut humeral surface when coupled therewith and the non-intramedullary base extension is impacted into the cancellous region and ~~non-intramedullary, and~~

wherein the multiple fins include a pair of substantially uniformly planar, intersecting fins.

Claim 2 (Cancelled)

Claim 3 (Cancelled)

Claim 4 (Currently amended): The apparatus of Claim 1, wherein ~~the protruding base extension includes at least two fins formed to have~~ said pair of intersecting fins form a cruciform shape.

Claim 5 (Previously amended): The apparatus of Claim 1, wherein the shape of one or more of said multiple fins is plano-triangular.

Claim 6 (Previously amended): The apparatus of Claim 3, wherein the protruding base extension further includes at least one linear extension fin.

Claim 7 (Cancelled)

Claim 8 (Currently amended): A total shoulder arthroplasty apparatus for recreating an anatomic proximal humeral configuration, comprising:

a stemless, ~~partial~~ humeral head fixation configured for coupling fixation to a previously cut proximal humeral surface, wherein the ~~partial~~ humeral head fixation includes a partial humeral head including a base surface configured for cement or ingrowth fixation, or both, and a non stem-bearing stabilizing base extension including multiple fins protruding therefrom configured for impaction into a cancellous region of the cut humeral surface, wherein the base surface of the ~~partial~~ humeral head is configured to contact ~~contacts~~ or substantially ~~mates~~ mate with the cut humeral surface when coupled therewith and the non-intramedullary base extension is impacted into the cancellous region ~~and non-intramedullary, and~~

wherein the multiple fins are formed to have a cruciform shape including a pair of substantially uniformly planar, intersecting fins.

Claim 9 (Original): The apparatus of Claim 8, wherein the protruding base extension includes two or more linear extensions for rotational stabilization.

Claim 10 (Currently amended): The apparatus of any of Claims 1 or 8, wherein ~~the~~ a periphery of the ~~partial~~ humeral head fixation is formed to match cortical margins of the cut humeral surface.

Claim 11 (Currently amended): The apparatus of any of Claims 1 or 8, wherein the ~~partial~~ humeral head fixation is configured to be attached to the humeral surface using an adhesive.

Claim 12 (Original): The apparatus of Claim 11, wherein the adhesive is surgical cement.

Claim 13 (Currently amended): The apparatus of any of Claims 1 or 8, wherein the ~~partial~~ humeral head fixation is configured to be attached to the humeral surface by press-fitting.

Claim 14 (Currently amended): The apparatus of any of Claims 1 or 8, wherein ~~the~~ a periphery of the base of the ~~partial~~ humeral head fixation is formed to match a specific shape and size of the anatomic neck of a specific humeral surface.

Claim 15 (Currently amended): The apparatus of any of Claims 1 or 8, further comprising a template punch configured to be inserted into the cut humeral surface, wherein the base extension is a total or partial male complement to ~~the~~ a female template punch.

Claim 16 (Currently amended): A total shoulder arthroplasty apparatus for recreating an anatomic proximal humeral configuration, comprising:

a stemless, ~~partial~~ humeral head fixation configured for coupling fixation to a flat cut proximal humeral surface, wherein the ~~partial~~ humeral head fixation includes a ~~partial~~ humeral head including a base surface configured for cement or ingrowth fixation, or both, and a rotationally-stabilizing base extension protruding therefrom including multiple fins configured for impaction into a cancellous, non-intramedullary region of the cut humeral surface, wherein the base surface of the ~~partial~~ humeral head is configured to contact ~~contacts~~ or substantially mate ~~mates~~ with the cut humeral surface when coupled therewith and the non-intramedullary base extension is impacted into the cancellous region and non-intramedullary, and
wherein the multiple fins are formed to have a cruciform shape including a pair of substantially uniformly planar, intersecting fins.

Claim 17 (Currently amended): The apparatus of Claim 16, wherein ~~the~~ a periphery of the ~~partial~~ humeral head fixation is formed to match cortical margins of the cut humeral surface.

Claim 18 (Currently amended): The apparatus of Claim 16, wherein the ~~partial~~ humeral head fixation is configured to be attached to the humeral surface using an adhesive.

Claim 19 (Original): The apparatus of Claim 18, wherein the adhesive is surgical cement.

Claim 20 (Currently amended): The apparatus of Claim 16, wherein the ~~partial~~ humeral head fixation is configured to be attached to the humeral surface by press-fitting.

Claim 21 (Currently amended): The apparatus of Claim 16, wherein ~~the~~ a periphery of the base of the ~~partial~~ humeral head fixation is formed to match a specific shape and size of the anatomic neck of a specific humeral surface.

Claim 22 (Currently amended): The apparatus of Claim 16, further comprising a template punch configured to be inserted into the cut humeral surface, wherein the base extension is a total or partial male complement to ~~the~~ a female template punch.

Claim 23 (Currently amended): A total shoulder arthroplasty apparatus for recreating an anatomic proximal humeral configuration, comprising:

a ~~partial~~ humeral head fixation configured for coupling fixation to a flat cut proximal humeral surface, wherein the ~~partial~~ humeral head fixation includes a ~~partial~~ humeral head including a base surface configured for cement or ingrowth fixation, or both, and a rotationally-stabilizing base extension protruding therefrom including multiple fins for impaction into a cancellous region of the cut humeral surface, and wherein the base extension is confined to protrude only into a ball region of the humerus, to which the humeral head is configured to couple ~~couples~~, and which is above an elongate region of the humerus, wherein the base surface of the ~~partial~~ humeral head is configured to contact ~~contacts~~ or substantially mate ~~mates~~ with the cut humeral surface when coupled therewith and the non-intramedullary base extension is impacted into the cancellous region ~~and non-intramedullary, and~~

wherein the multiple fins include a pair of substantially uniformly planar, intersecting fins.

Claim 24 (Currently amended): A total shoulder arthroplasty apparatus for recreating an anatomic proximal humeral configuration, comprising:

a ~~partial~~ humeral head fixation configured for coupling to a cut proximal humeral surface, wherein the ~~partial~~ humeral head fixation includes a ~~partial~~ humeral head including a base surface configured for cement or ingrowth fixation, or both, and a rotationally-stabilizing base extension protruding therefrom including multiple fins configured for impaction into a cancellous region of the cut humeral surface, and wherein the extension is nonintrusive of an elongate humeral region below a humeral ball region including the humeral head, wherein the base surface of the ~~partial~~ humeral head is configured to contact ~~contacts~~ or substantially mate ~~mates~~ with the cut humeral surface when coupled therewith and the non-intramedullary base extension is impacted into the cancellous region and non-intramedullary, and wherein the multiple fins include a pair of substantially uniformly planar, intersecting fins.

Claim 25 (Currently amended): A total shoulder arthroplasty method for recreating an anatomic proximal humeral configuration, comprising the steps of:

preparing a stemless ~~partial~~ humeral head fixation having a ~~partial~~ humeral head including a base surface configured for cement or ingrowth fixation, or both, and a stabilizing base extension including multiple fins for efficient rotational stabilization of the ~~partial~~ humeral head fixation on a cut humeral surface configured for coupling with the cut humeral surface;

preparing a humeral surface for coupling the partial humeral head fixation thereto, including cutting the humeral surface to reveal a cancellous interior; and

coupling the partial humeral head fixation to the humeral surface including cement or ingrowth fixation of the humeral head with the humeral surface, thereby recreating the anatomic proximal humeral configuration, wherein the base surface of the partial humeral head contacts or substantially mates with the

cut humeral surface when coupled therewith and the non-intramedullary base extension is impacted into the cancellous region and non-intramedullary, and wherein the multiple fins include a pair of substantially uniformly planar, intersecting fins.

Claim 26 (Cancelled)

Claim 27 (Cancelled)

Claim 28 (Currently amended): The method of Claim ~~27~~ 25, wherein the planar shape of the one or more fins is triangular.

Claim 29 (Currently amended): The method of any of Claims 23-25 ~~claim 25~~, wherein ~~the stabilizing base extension includes two fins formed to have said pair of intersecting fins form~~ a cruciform shape.

Claim 30 (Currently amended): The method of Claim 25, wherein the protruding base extension further includes at least one linear fin extension.

Claim 31 (Currently amended): A total shoulder arthroplasty method for recreating an anatomic proximal humeral configuration, comprising the steps of:

preparing a stemless ~~partial~~ humeral head fixation having a ~~partial~~ humeral head including a base surface and a non stem-bearing stabilizing base extension including multiple fins for rotational stabilization of the ~~partial~~ humeral head fixation on a cut humeral surface for coupling to the cut humeral surface;

preparing a humeral surface for coupling the ~~partial~~ humeral head fixation thereto, including cutting the humeral surface to reveal a cancellous interior; and

coupling the ~~partial~~ humeral head fixation to the humeral surface, thereby recreating the anatomic proximal humeral configuration, wherein the base surface of the partial humeral head contacts or substantially mates with the cut humeral surface when coupled therewith and the non-intramedullary base extension is impacted into the cancellous region and non-intramedullary, and wherein the multiple fins are formed to have a cruciform shape including a pair of substantially uniformly planar, intersecting fins.

Claim 32 (Original): The method of Claim 31, wherein the base extension includes two or more linear extensions.

Claim 33 (Currently amended): The method of any of Claims 25 or 31, wherein the coupling step includes the step of impacting the base extension into the cancellous interior of the cut humeral surface, wherein the periphery of the ~~partial~~ humeral head fixation rests on the cortical margins of the humeral surface following the coupling.

Claim 34 (Previously amended): The method of any of Claims 25 or 31, wherein the coupling step includes the step of adhesively coupling the partial humeral head fixation to the humeral surface.

Claim 35 (Original): The method of Claim 34, wherein the adhesive is surgical cement.

Claim 36 (Currently amended): The method of any of Claims 25 or 31, wherein the coupling step includes the step of press-fitting the ~~partial~~ humeral head fixation to the humeral surface.

Claim 37 (Currently amended): The method of any of Claims 25 or 31, further comprising selecting a shape and size of the periphery of the base of the ~~partial~~ humeral head fixation from a variety of shapes and sizes for matching the specific shape and size of the anatomic neck of the cut humeral surface.

Claim 38 (Original): The method of any of Claims 25 or 31, further comprising the step of inserting a template punch into the cancellous of the cut humeral surface prior to performing the coupling step.

Claim 39 (Currently amended) The method of Claim 38, wherein the base extension is a total or partial male complement to ~~the~~ a female template punch.

Claim 40 (Cancelled)

Claim 41 (Previously amended) The method of any of Claims 25 and 31, wherein the coupling step includes impacting the base extension of the partial humeral head fixation nonintrusive to an elongate region of the humerus below a ball region of the humerus.

Claim 42 (Currently amended) A total shoulder arthroplasty method for recreating an anatomic proximal humeral configuration, comprising the steps of:
 preparing a stemless ~~partial~~ humeral head fixation having a partial humeral head including a base surface and a non stem-bearing stabilizing base extension including multiple fins for rotational stabilization of the humeral head on a cut humeral surface for coupling to the cut humeral surface;
 preparing a humeral surface for coupling the ~~partial~~ humeral head fixation thereto, including cutting the humeral surface to reveal a cancellous interior; and

coupling the ~~partial~~ humeral head fixation to the humeral surface, thereby recreating the anatomic proximal humeral configuration, including impacting the base extension of the ~~partial~~ humeral head fixation to protrude only into a ball region of the humerus above an elongate region of the humerus, wherein the base surface of the partial humeral head contacts or substantially mates with the cut humeral surface when coupled therewith and the non-intramedullary base extension is impacted into the cancellous region and non-intramedullary, and wherein the multiple fins are formed to have a cruciform shape including a pair of substantially uniformly planar, intersecting fins.

Claim 43 (Currently amended) A total shoulder arthroplasty method for recreating an anatomic proximal humeral configuration, comprising the steps of:

preparing a stemless ~~partial~~ humeral head fixation having a ~~partial~~ humeral head including a base surface and a non stem-bearing stabilizing base extension including multiple fins for rotational stabilization of the ~~partial~~ humeral head fixation on a cut humeral surface for coupling to the cut humeral surface;

preparing a humeral surface for coupling the ~~partial~~ humeral head fixation thereto, including cutting the humeral surface to reveal a cancellous interior; and

coupling the ~~partial~~ humeral head fixation to the humeral surface including cement or ingrowth fixation, or both, of the humeral head with the humeral surface, thereby recreating the anatomic proximal humeral configuration, including impacting the base extension of the ~~partial~~ humeral head fixation nonintrusive to an elongate region of the humerus below a ball region of the humerus, wherein the base surface of the ~~partial~~ humeral head contacts or substantially mates with the cut humeral surface when coupled therewith and the non-intramedullary base extension is impacted into the cancellous region and non-intramedullary, and

wherein the multiple fins are formed to have a cruciform shape including a pair of substantially uniformly planar, intersecting fins.

Claim 44 (withdrawn): The method of any of Claims 25, 31 or 42-43 wherein said preparing step comprises the steps of:

- surgically establishing an access to a humerus of a patient;
- coupling a guide to the humerus, wherein the humeral head remains exposed;
- positioning said guide to define a humeral surface; and
- removing said humeral head by cutting along said humeral surface defined by said guide, whereby a precise humeral surface is revealed for attaching an artificial humeral head during said arthroplasty.

Claim 45 (withdrawn): The method of Claim 44, further comprising the step of aligning said humeral surface with a glenoid version guide.

Claim 46 (withdrawn): The method of Claim 44, further comprising the steps of:

- preparing for coupling to the cut humeral surface a stemless humeral head having a base including a non stem-bearing stabilizing base extension for rotational stabilization of the humeral head on a cut humeral surface; and
- coupling the humeral head to the humeral surface, thereby recreating the anatomic proximal humeral configuration.

Claim 47 (withdrawn): A method for performing a shoulder arthroplasty, comprising the steps of:

- surgically establishing an access to a humerus of a patient;
- coupling a guide to the humerus, wherein the humeral head remains exposed;

positioning said guide to define a humeral surface; and
removing said humeral head by cutting along said humeral surface
defined by said guide, whereby a precise humeral surface is revealed for
attaching an artificial humeral head during said arthroplasty.

Claim 48 (withdrawn): The method of Claim 47, further comprising the step of
aligning said humeral surface with a glenoid version guide.

Claim 49 (withdrawn): The method of Claim 47, further comprising the steps of:
preparing for coupling to the cut humeral surface a stemless humeral head
having a base including a non stem-bearing stabilizing base extension for
rotational stabilization of the humeral head on a cut humeral surface; and
coupling the humeral head to the humeral surface, thereby recreating the
anatomic proximal humeral configuration.

Claim 50 (Currently amended): A total shoulder arthroplasty method for
recreating an anatomic proximal humeral configuration, comprising the steps of:
preparing a stemless ~~partial~~ humeral head fixation having a ~~partial~~
humeral head including a base surface configured for cement or ingrowth
fixation, or both, and a non stem-bearing stabilizing base extension including
multiple fins for rotational stabilization of the ~~partial~~ humeral head fixation on a
cut humeral surface configured for coupling to the cut humeral surface;
preparing a humeral surface for coupling the ~~partial~~ humeral head fixation
thereto, including cutting the humeral surface to reveal a cancellous interior; and
coupling the ~~partial~~ humeral head fixation to the humeral surface including
cement or ingrowth fixation, or both, of the humeral head with the humeral
surface, thereby recreating the anatomic proximal humeral configuration, wherein
the base surface of the ~~partial~~ humeral head contacts or substantially mates with

the cut humeral surface when coupled therewith and the non-intramedullary base extension is impacted into the cancellous region and non-intramedullary, and wherein the multiple fins are formed to have a cruciform shape including a pair of substantially uniformly planar, intersecting fins.

Claim 51 (Currently amended): The method of any of Claims 25, 31 or 42-43 wherein said step of preparing a humeral surface step comprises the steps of:
surgically establishing an access to a humerus of a patient;
coupling a guide to the humerus, wherein the humeral head remains exposed;
positioning said guide to define a humeral surface; and
removing said humeral head by cutting along said humeral surface defined by said guide, whereby a precise humeral surface is revealed for attaching an artificial ~~partial~~ humeral head fixation during said arthroplasty.

Claim 52 (Previously added): The method of Claim 51, further comprising the step of aligning said humeral surface with a glenoid version guide.

Claim 53 (Cancelled)

Claim 54 (Currently amended): A method for performing a shoulder arthroplasty, comprising the steps of:
surgically establishing an access to a humerus of a patient;
coupling a guide to the humerus, wherein the humeral head remains exposed;
positioning said guide to define a humeral surface;
removing said humeral head by cutting along said humeral surface defined by said guide, whereby a precise humeral surface is revealed for

attaching an ~~artificial-partial~~ artificial humeral head fixation during said arthroplasty;

preparing for coupling to the cut humeral surface a stemless ~~partial~~ humeral head fixation having a ~~partial~~ humeral head including a base surface and a non stem-bearing stabilizing base extension including multiple fins protruding therefrom for rotational stabilization of the ~~partial~~ humeral head fixation on a cut humeral surface; and

coupling the ~~partial~~ humeral head fixation to the humeral surface, thereby recreating the anatomic proximal humeral configuration, wherein the base surface of the ~~partial~~ humeral head contacts or substantially mates with the cut humeral surface when coupled therewith and the non-intramedullary base extension is impacted into the cancellous region and non-intramedullary, and

wherein the multiple fins are formed to have a cruciform shape including a pair of substantially uniformly planar, intersecting fins.

Claim 55 (Previously added): The method of Claim 54, further comprising the step of aligning said humeral surface with a glenoid version guide.

Claims 56 - 69 (cancelled)